VEGETATION

INTRODUCTION

The existing vegetation in Hawthorne is a result of natural elements such as geology, soils, hydrology, and climate interacting with the human built environment. The type of vegetation that will grow on a site is dictated by temperature, the amount of sun or shade available, the fertility of the soil, and most important, the amount of moisture available. As plants are not static and independent organisms, species of plants will associate with similar plant species that require the same living conditions to form a community. These communities will evolve through time, changing in numbers, density, and types of species in response to environmental changes.

Human activities, however, bring about the greatest changes in the composition and health of plant communities. Air and water pollution, and human development intensify the effects and make plants more susceptible to naturally occurring diseases and insect infestation. The human desire to alter the landscape and replace native ecosystems with ornamental plantings and turfgrass has also significantly changed the vegetation of Hawthorne.

Trees can provide many benefits. In the summer, cities become “heat islands” which can get up to 12°F hotter than the surrounding countryside. Trees provide shade and reduce the heat absorbed which lowers surface temperatures by 7° to 11°F and air temperatures by 2° to 7°F. Trees also lower heating bills by blocking cold winter wind. Since trees keep cities cooler in the summer and warmer in the winter, less electricity is used for heating and cooling. (NJDEP Division of Parks & Forestry Community Forestry Cool Cities website)

In 2000, the Assessment of Our Nation’s Urban Forests by the United States Department of Agriculture and United States Forestry Service is the first national assessment of urban forest resources in the United States. It provides a basis to help develop comprehensive management plans to sustain the urban forest resource and improve environmental quality, enhance human health, and well-being, and connect people with the ecosystems in the 21st century. The report assesses metropolitan area and urban area. A metropolitan area is defined as a county, or group of counties, that contains a large population nucleus as its core; can include adjacent counties that have a high degree of economic and social integration with the core. An urban area is defined as urbanized areas and unincorporated or incorporated places (for example, cities, towns, and villages) having at least 2,500 people.

The Northeast is the most urbanized portion of the Nation; 9 of the 10 states with the highest proportion of urban land in this region. States with the highest proportion of their total tree cover in urban areas include New Jersey (22.3%), Massachusetts (14.4%), and Connecticut (14.0%). New Jersey has 143,869,000 estimated urban trees, 20 urban trees per capita, 41.4 % of urban tree cover, 22.3% portion of state tree cover, 6,916 urban area (includes land and water), and 30.6 portion of the state.

Nationally, urban areas have an average tree cover of 27.1 percent. This percentage of tree cover is not far below the national average for all lands 32.8 percent. The average

percentage of tree canopy cover for both metropolitan areas (33.4 percent) and urban areas (27.1 percent) is close to that for all land in the conterminous United States (32.8 percent), thereby demonstrating that urban areas and urban influence can coexist with a significant tree canopy.

The Borough of Hawthorne has tree canopy coverage of 20%, 8.8 square kilometers of land area, 0.1 kilometers of water area, 1990 population of 17,084 and 1,941.8 people per square kilometers (Connecting People).

BENEFITS OF VEGETATION

Vegetation plays an important functional role in the preservation of the landscape. Trees and shrubs control polluted surface runoff, soil erosion, slope stability, flood control, and microclimate (Collins and Anderson 1994). Naturally, vegetated slopes and stream corridors act as living filters, intercepting and absorbing nutrients, sediment and other pollutants and incorporating these inputs into their life cycle (Collins and Anderson 1994). The root systems of plants similarly provide structural integrity and strength to soils and slopes reducing erosion from wind and water. Floodplain and wetland vegetation provide storage area for floodwaters. The influence of plants on microclimates can also be very pronounced. The leaf canopy formed from mature trees can effectively reduce the amount of solar radiation and moderate temperatures through shade and transpiration of water. This is especially important in moderating the urban heat effect created by large areas of built surface that retain heat.

Vegetation is also important in the urban/suburban environment in establishing aesthetics, creating boundaries, influencing pedestrian behavior, and reducing noise. One of the most significant functions of vegetation is in providing beauty to parks, streets, and homes. Trees and shrubs can be utilized to frame a view, provide ornamentation to a building or house, and serve as a screen or visual barrier between conflicting land uses. Street trees establish a protective barrier between the roadway and sidewalk and create an overhead canopy providing a comfortable space for the pedestrian. Vegetation can also control noise by serving as a barrier absorbing and diverting sound energy.

HISTORICAL VEGETATION

Prior to European settlement, most of the eastern United States was covered by a large diverse deciduous forest that stretched from New England to northern Florida (Collins and Anderson 1994). The deciduous forest contains 12 distinct plant habitats based on topography that was locally differentiated by the amount of moisture in the soils (Collins and Anderson 1994). Plant communities in Hawthorne included wetlands and wooded floodplains along the streams and rivers, upland oak and maple forests on evenly drained soils in the valley and base of the ridges, and oak forests on the drier slopes and ridgetop of the First Watchung Mountain.

Along the river floodplains and riparian corridors of Goffle Brook and Depe Vole Brook, there were open scrub-shrub wetlands and closed forested areas containing water tolerant species that adapted to the seasonal fluctuations of flooding on poorly drained soils. Typical trees of these floodplains include green ash, pin oak, swamp white oak, silver and red maple, elm, river birch, sycamore, and black gum.

View of floodplain forest along the Goffle Brook

On the more evenly drained upland soils, there is a possibility of finding several different forest habitats. Depending upon the time of the most recent disturbance and at which stage of succession the forest is in, there may be a variety if different deciduous woodland combinations (Godfrey 1980). Generally, the oak-chestnut forest changes naturally over time, succeeding, to a mixed-hardwood forest that is the climax forest or final forest type. However, at any given time, the woodland could be at any stage from an open meadow following a forest fire to an old growth forest of mixed hardwoods. In the typical mixed hardwood forest, there are red, white, and black oak, hickories, red and sugar maple, white ash, beech, elm, black cherry, and tulip tree (Collins and Anderson 1994).

The Watchung Ridge that rises along the western edge of Hawthorne creates a local environment that is much drier than the adjacent valley. This site is more exposed to desiccating winter winds and severe weather and contains shallow soils that do not retain much moisture. These conditions support a unique vegetation community known as the chestnut oak forest. This plant community is dominated by chestnut oak with red oak, white oak, scarlet oak, and black birch. Of special note: the Second Watchung Ridge, located about ½ mile to the west of the First Watchung and which includes High Mountain in North Haledon and Wayne contains several globally unique plant species that grow only in southwest facing trap rock meadows. The Nature Conservancy has dedicated financial and management resources to protecting and expanding this unique vegetation community.

VEGETATION TODAY

As the Europeans arrived and northern New Jersey became settled, the native vegetation was cleared and removed for agriculture, providing land for farming, pastures for grazing livestock, and, most importantly, timber and firewood for fuel (Collins and Anderson 1994). The native deciduous forest was eliminated from all but the most inaccessible locations. After World War II a second vegetation change occurred on the landscape in Hawthorne. As the municipality grew with new residential growth and expanding neighborhoods, ornamental plants and turfgrass became the dominant habitat. Most of the ornamental trees, shrubs, and flowers were planted for aesthetic

purposes. As these plants are introduced, they are not native to this region and not useful for animal life as a source of food.

The largest undeveloped section of Hawthorne that contains substantial open space and vegetation is the County of Passaic's Goffle Brook Park. The park is maintained as a pastoral passive recreation park with large flowing swaths of turfgrass and mature shade trees. Much of the park is located within the floodplain area of the Goffle Brook with some native shrubs and trees still lining the brook within the riparian corridor, but for the most part this riparian habitat has been eliminated. The groves of large shade trees create picturesque views and areas for relaxation, but do not contain a diversified understory or herbaceous plant layer to sustain the woodland character.

The *Eight Acre Woods* municipal parkland, located adjacent to the Goffle Brook Park and Boys and Girls Club, is an excellent example of a suburban woodland area undergoing successional change that is heavily influenced by invasive exotic plants. The site is seasonally wet, as it is adjacent to the Goffle Brook and contains some wetland areas. The mature vegetation includes red maple, beech, white ash, basswood and sycamore trees and shrubs such as spicebush, witch hazel, and dogwood - all native plants (Hildebrand 2000). However, the understory contains very few seedlings of these species and is for the most part overrun by exotic plants such as multiflora rose, daylilies, Japanese knot weed, and barberry, plants that compete exceedingly well with native species for sunlight and nutrients. These exotic plants have been introduced into the United States, and do not have natural controls. Unfortunately, the exotics contain very little habitat value for wildlife, so as they overtake a site, they create a sterile and inhospitable environment.

View of the woodland area in the Eight Acre Woods.

In September 2007, an Eagle Scout project to revive the 8-acre to make the area more pleasurable for the people of Hawthorne. The goal of the project was to identify and mark the existing trails, place trail maps throughout the woods to help guide people, and cleanup the observation areas and surrounding brush. The Hawthorne Environmental Commission received the Association of New Jersey Environmental Commission Environmental Achievement Award in 2008 for the 8-acre woods project. Social deterioration led to the revival of the project in July 2010 by another Eagle Scout. By August of 2010, the project was completed successfully.

The slopes and summit of the First Watchung still contain sections of forest that is all second growth and less than 100 years old with some occasional exceptions. These woodlot areas are generally highly disturbed with a disrupted understory layer and a

substantial number of invasive exotic plants adversely affecting the future forest. These woodlot areas are, however, providing essential erosion control on the steep sloped areas.

NATIVE PLANTS

Since 2012, the Hawthorne Green Team, sub-committee of the Hawthorne Environmental Commission, has been educating our residents about native plants, and we have been encouraging them to reintroduce such plants into their landscapes. Building upon our native plant efforts, in 2016, the Borough of Hawthorne received a $2,000 Sustainable Jersey Capacity grant to plant the inclusion of native plants into the landscape of property owned by the Borough of Hawthorne and Hawthorne Retailer Businesses.

The beautification of the selected Hawthorne areas provided the community the hands-on experience of how native plants can increase the biodiversity of Hawthorne's ecology system. The native plant identification area signs provide a reminder for residents of Hawthorne on the importance of native plants as well as providing a teaching tool for all generations. Seeing the actual implementation of this project and its success is not something you learn from a book or a lecture. The Green Lectures are utilized to reinforce the importance of native plants, but it's setting the example that will get the residents attention.

Native plants provide the following to the environment:

- Low Maintenance - Once established native plants are hardy and adapted to normal weather extremes. They have also developed natural defenses against pests and diseases reducing the need for applying pesticides.
- Wildlife - Native plants provide food and shelter for 10 to 15 times as many species of native wildlife as non-native plants.
- Wild Pollinators - Native plants support native pollinators. Native pollinators and native plants have co-evolved to reach an intricate balance. Many wild pollinators cannot survive without the plants they have evolved with. (i.e., Monarch Butterflies)
- Save Water - Native plants are adapted to moisture from rain and only need watering in severe conditions. One thousand square feet of lawn can use up to 10,000 gallons of water per summer.
- Air Quality - Native plants do not require motorized equipment, lawn mowers, string trimmers and leaf blowers can emit more hydrocarbons than a typical car.
- Beauty - Native plants can help blend our lands and building into the surrounding environment and create landscapes that are regional, unique, and beautiful.
- Biodiversity - Native Plants serve as an important genetic resource for future food crops or other plant-derived products.

Source: Native Plants | Hawthorne, NJ (hawthornenj.org)

The Native Plant Society of New Jersey provides information on native and Invasive Nonindigenous species of plants in New Jersey (source: www.npsnj.org)

Table 6. Native Plant Species found in Goffle Brook Park.
Photographed by Alexandra Soteriou (2020).

Common Name	Scientific Name	Photo
American Pokeweed	Phytolacca americana	
Common Milkweed (Pod)	Asclepias Syriaca	
Common Milkweed (Bloom)	Asclepias Syriaca	
Northern Bedstraw	Galium boreale	
Spotted Joe Pye Weed	Eutrochium maculatum	
Stickywilly	Galium aparine	

Common Name	Scientific Name	Photo
Swamp Buttercup	Ranunculus septentrionalis	
Whitegrass	Leersia virginica	
Wild Mint	Mentha Arvensis	
Yellow Marsh Marigold	Caltha palustris	

INVASIVE NONINDIGENOUS PLANTS

Non-native species (also called alien, exotic or introduced species) are those species that have been introduced outside their natural geographic range as a result of human actions, whether intentionally (e.g., as sources of food, for landscaping purposes or the release of unwanted pets) or unintentionally (e.g., in the ballast of a ship or in a load of lumber). Executive Order 13112 defines an *invasive species* as a species that is non-native to the ecosystem and whose introduction causes or is likely to cause economic or environmental harm or harm to human health (USDA, February 3, 1999). The most problematic of these displace native species,contribute to local elimination of species or even extinctions, alter the community structure, and may eventually disrupt ecosystem processes (Snyder et al, 2004). Preliminary research in NJ has documented over 1,200 species of nonindigenous plant species, or as much as 62% of the state's total vascular flora (Snyder et al, 2004).

Native plants can be susceptible to introduced diseases, which they have not evolved resistance to the chestnut blight fungus was an accidental introduction that destroyed all mature American chestnut (*Castanea dentata*) trees, once one of the dominant trees in the New Jersey landscape. Another introduced fungus, Dutch elm disease, destroyed the American elm (*Ulmus americana*).

In addition, native plants may have little resistance to certain introduced insects, and/or these insects may have no natural enemies in their new surroundings, allowing them to rapidly reach pest proportions. Introduced insects, which may be impacting Oakland's trees, include the hemlock wooly adelgid, gypsy moth, scarlet oak sawfly and Beech Bark Disease (which is caused by a non-native scale insect that introduces a fungal disease) (NJ Forest Service, 2010). They weaken their host trees, which often succumb to successive years of infestation, to diseases carried by the insect pests, such as bacterial leaf scorch, or other environmental stresses.

For these reasons, the Final Report of the New Jersey Comparative Risk Project, which evaluated the relative risks of environmental problems to the people and ecosystems of New Jersey identified invasive species (including plants, insects, and other organisms) as one of the state's top environmental problems (Steering Committee of the New Jersey Comparative Risk Project, 2003).

Table 7. Invasive Nonindigenous Plant Species found in Goffle Brook Park. Photographed by Alexandra Soteriou (2020).

Common Name	Scientific Name	Photo
Birdsfoot Trefoil	Lotus corniculates	
Common Yarrow	Achillea millefolium	
Crown Vetch	Securigera varia	
Evening Lychnis	Silene latifolia	

Common Name	Scientific Name	Photo
Floss Flower	Ageratum houstonianum	
Foxtail grass	Alopecurus	
Garlic Mustard	Alliaria petiolate	
Greater Burdock	Arctium lappa	
Ground Ivy	Glechoma hederacea	
Japanese Knotweed	Polygonum cuspidatum	
Purple Deadnettle	Lamium purpureum	

Common Name	Scientific Name	Photo
Red Clover	Trifolium pratense	
Sleepydick	Ornithogalum umbellatum	
True Forget me Not	Myosotis scorpioides	

BENEFITS OF TREES

There are several benefits of trees. Below is a summary of the advantages:

1) Economic Contributions

Trees or lack of trees can influence economics. A property for sale with five large trees in the front yard yields a 4% higher price than property with small trees or no trees. Similarly, apartments and offices with a green view rent quickly and get higher rent. People also react more favorably to tree lined parking lots of shopping centers; they will pay 12% more in this atmosphere and linger longer. Trees make us feel good, and we'll pay to be around them.

2) Energy Savings

Shade Sun

A home shaded by three trees can cut energy bills by 50% in the summer thanks to shade and transpiration. Those same trees serve as windbreaks for those cold winter winds and reduce heating costs by 30%. As few as three trees properly positioned can save the average household between $100 and $250 annually in energy costs.

Block Wind

Rows of trees reduce windspeed by up to about 85%, with maximum reductions increasing in proportion to visual density. Because even a single row of dense conifers can cause large reductions in windspeed, effective windbreaks can be planted on relatively small house lots. Compared with an open area, a good windbreak that does not shade the house will save about 15% of the heat energy used in a typical home.

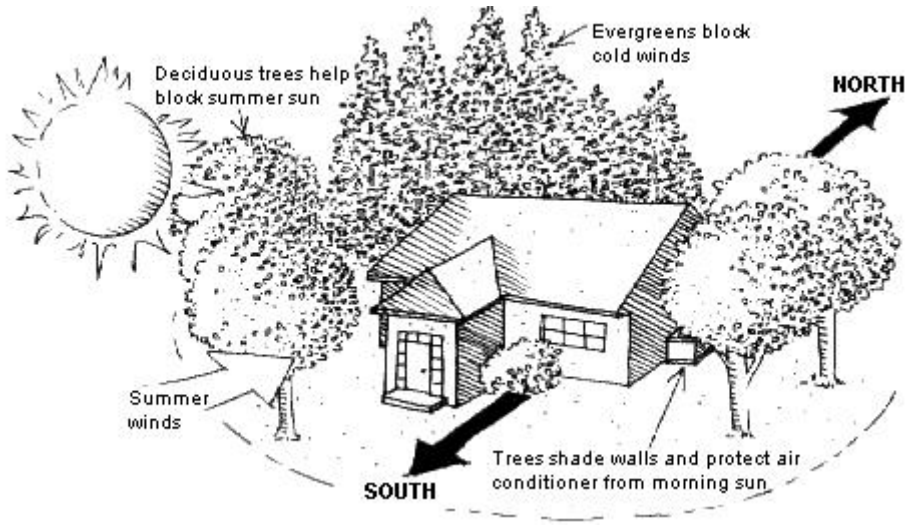


Fig. 9. How to Plant a Tree. From American Forests.

3) Environmental Health

Improve Air Quality

Trees help trap and hold particle pollutants such as dust, pollen and smoke that can damage our lungs. Trees remove pollutants by absorbing them through the pores in the leaf surface. Particulates are trapped and filtered by leaves, stems, and twigs, and

washed to the ground by rainfall. Trees also absorb CO2 and other dangerous gasses and replenish the atmosphere with oxygen. Yearly, one acre of trees absorbs enough CO2 to offset a car driven 26, 000 miles and produces enough oxygen for 18 people.

Filter Water
Trees help keep water clean and drinkable. When non-point source pollution such as oil, fertilizers, and sediment get washed away with the rain, tree roots can trap and filter out the contaminants before they affect the water supply.

Reduce Runoff
100 mature trees can intercept 100,000 gallons of rainfall per year. The rain falls on the canopy, catching the water and allowing it to gently drip to the ground or evaporate. This lessens street flooding and soil erosion.

Provide Wildlife Habitat
Wherever trees are established, wildlife and other plants are sure to follow. Trees and associated plants provide shelter and food for a variety of birds and small animals. The presence of trees creates an environment that allows the growth of plants that otherwise would not be there, enhancing the diversity.

4) Social Advantages
Reduce Medical Costs
Trees have a profound effect on those under medical care. A study of gallbladder surgery patients found that patients with a view of trees not only got out of the hospital one day sooner, but also had fewer complications and needed less pain medication. Another study found that psychiatric patients exposed to greenspace socialized more and had fewer negative encounters.

Provide Recreation Opportunities
Parks and greenspaces provide a place for recreation such as hiking, fishing, and nature watching. These activities not only allow us to connect with the natural environment, but it also provides exercise.

Calm Nervousness and Stress
Nature has been proven to reduce the stress response in both the mind and body. A tree-lined highway quells road rage. Children with Attention Deficit Hyperactivity Disorder (ADHD) are more focused and are able to complete tasks while in a natural environment.

Connect with Nature
When community members join together for a tree planting or clean-up, they feel a sense of environmental responsibility and a connection with their natural environment. The residents also have a more positive perception of their community once they had a hand in improving it. (NJDEP Division of Parks & Forestry Community Forestry Cool Cities website)

MUNICIPAL STREET TREES AND MANAGEMENT

The Borough of Hawthorne's Shade Tree Commission with the Department of Public Works (DPW) is responsible for the care and maintenance of shade trees along town streets and parks.

Shade trees require special care and attention because of the harsh environment in which they live. In the past four years (2006-2009), the Shade Tree Commission has removed approximately 246 stumps, cut and removed 559 dead trees, and trimmed 840 trees (Savoie 2010). Most of the trees are in good shape. The biggest health problems are a result of drought stress, improper planting, and anthracnose, a fungus disease that affects the leaves of broadleaf species such as maples and ash (Sowa 2000).

The Borough oversees approximately 3,400 trees of varying size, age, and species, although it is estimated that there are currently 1,500 vacancies, so that with replacement of missing trees the total could be over 4,900 (Savoie 2010). The Shade Tree Commission plants approximately 100 new trees a year that are primarily 2 1/2 inches in diameter. Since species diversity is a problem among the shade trees in Hawthorne, the Shade Tree Commission plants an estimated 64 different species of trees. (Savoie 2010).

Cool Cities initiative developed a tree species list (**Table 8**). The Shade Tree Commission utilizes the tree species, but not limited to, as a tool to select the trees that may be planted in Hawthorne.

Table 8. Cool Cities Species List

Common Name	Scientific Name	Size
Amur Maackia	Maackia amurensis	Small
Magnolia	Magnolia spp.	Small
Crabapple	Malus spp.	Small
American Hop Hornbeam	Ostrya virginiana	Small
Persian Parrotia	Parrotia persica	Small
Amur Corktree	Phellodendron amurense (Male)	Medium
Blood Good London Plane Tree	Platanus x acerifolia “Blood good”	Large
Newport Purple-leaf Plum	Prunus cerasifera “Newport”	Small
Sargent Cherry	Prunus sargentii	Small
Amanogawa Oriental Cherry	Prunus serrulata “Amanogawa	Small
Kwanzan Cherry	Prunus serrulata “Kwanzan”	Small
Yoshino Cherry	Prunus x yedoensis	Small
Chanticleer Pear	Pyrus calleryana “Chanticleer”	Large
Sawtooth Oak	Quercus acutissima	Large
Swamp White Oak	Quercus bicolor	Large
Scarlet Oak	Quercus coccinea	Large
Bur Oak	Quercus macrocarpa	Large
Pin Oak	Quercus palustris	Large
Northern Red Oak	Quercus rubra	Large
Japanese Pagoda Tree	Sophora japonica	Large
Regent Scholartree	Sophora japonica “Regent”	Large
Stewartia	Stewartia pseudocamellia	Small

Common Name	Scientific Name	Size
Ivory Silk Japanese Tree Lilac	Syringa reticulate “Ivory silk”	Small
Redmond American Linden	Tilia Americana “Redmond”	Large
Little Leaf Linden	Tilia cordata	Large
Greenspire Little-leaf Linden	Tilia cordata “Greenspire”	Large
Silver Linden	Tilia tomentosa	Large
Princeton Elm	Ulmus Americana “Princeton”	Large
Liberty Elm	Ulmus Americana “Liberty cultivars”	Large
Washington Elm	Ulmus Americana “Washington”	Large
Homestead Elm	Ulmus “Homestead”	Large
Japanese Zelkova	Zelkova serrata	Large
Trident Maple	Acer buergerianum	Small
Hedge Maple	Acer campestre	Small
Ruby Slippers Amur Maple	Acer ginnala “Ruby slippers”	Small
Armstrong Red Maple	Acer rubrum “Armstrong”	Large
October Glory Red Maple	Acer rubrum “October Glory”	Large
Red Sunset Maple	Acer rubrum “Red sunset”	Large
Bonfire Sugar Maple	Acer saccharum “Bonfire”	Large
Green Mountain Sugar Maple	Acer saccharum “Green mountain”	Large
Tatarian Maple	Acer tatarcium	Small
Norwegian Sunset Maple	Acer truncatum “Norwegian sunset”	Small
Armstrong Freeman Maple	Acer x fremanii “Armstrong”	Large
Serviceberry	Amelanchier arborea	Small
Downy Serviceberry	Amelanchier canadensis	Small
Palisade American Hornbeam	Carpinus caroliniana “Palisade”	Small
European Hornbeam	Carpinus betulus	Small
Magnifica Hackberry	Celtis laevigat x occidentalis “Magnifica”	Large
Katsura Tree	Cercidiphyllum japonicum	Large
Redbud	Cercis canadensis	Small
Chinese Fringe Tree	Chionanthus retusa	Small
Yellowwood	Cladrastis kentukea	Medium
Flowering Dogwood	Cornus florida	Small
Cornelian Cherry (single stem)	Cornus mas	Small
Kousa Dogwood	Cornus kousa	Small
Turkish Filbert	Corylus colurna	Large
Hawthorn	Crataegus x lavallei	Small
Hardy Rubber Tree	Eucommia ulmoides	Large
Autumn Purple Ash	Fraxinus americana “Autumn Purple”	Large

Common Name	Scientific Name	Size
Rosehill Ash	Fraxinus americana "Rosehill"	Large
Newport Green Ash	Fraxinus pennsylvania "Newport"	Large
Patmore Green Ash	Fraxinus pennsylvania "Patmore"	Large
Ginkgo Ginkgo Biloba	Ginkgo biloba (Male)	Large
Magyar Ginkgo Biloba	Ginkgo biloba "Magyar" (Male)	Large
Thornless Honeylocust	Gleditsia triacanthos var. inermis	Large
Dwarf Honeylocust	Gledistia triancanthos	Small
Kentucky Coffeetree	Gymnocladus dioica	Large
Silverbell	Halesia spp.	Small
Golden Rain Tree	Koelrueteria paniculata	Small
Rotundiloba Sweetgum (seedless)	Liquidamber styraciflua "Rotundiloba"	Large

In 2007 the Borough of Hawthorne began the development of a Community Forestry Management Plan for the years 2007 to 2011. The management plan is created every 5 years to identify goals and objectives (Hawthorne is the 8th municipality in the state of New Jersey to develop a plan) and provide guidance on how funds should be spent. An essential component of the plan was an inventory of all trees along the Borough's streets and on Borough property. A comprehensive survey conducted in 1998 identified the type, condition, and size of all municipal trees. The information from this inventory (**Figs. 10 and 12**) indicates that the majority of trees in the borough were maples and oaks, that the average diameter was between 1 and 2 feet and most trees were in relatively good health.

Fig 10. Shade Tree Condition

Condition of Trees	Number of Trees
Good	2,250
Fair	1,008
Poor	205
Dead	19
TOTAL	**3,482**

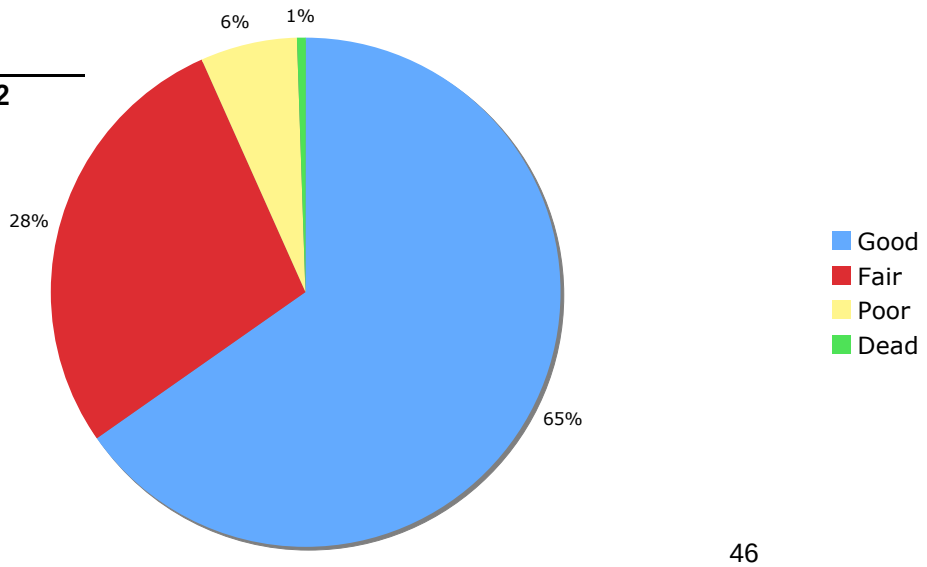


Fig 11. Shade Tree Diameter

Diameter of Trees	Number of Trees
0" - 3"	435
4" - 6"	414
7" - 12"	1,003
13" - 18"	568
19" - 24"	568
25" - 30"	279
31" - 36"	120
37" - 42"	28
>42"	10
TOTAL	**3,482**

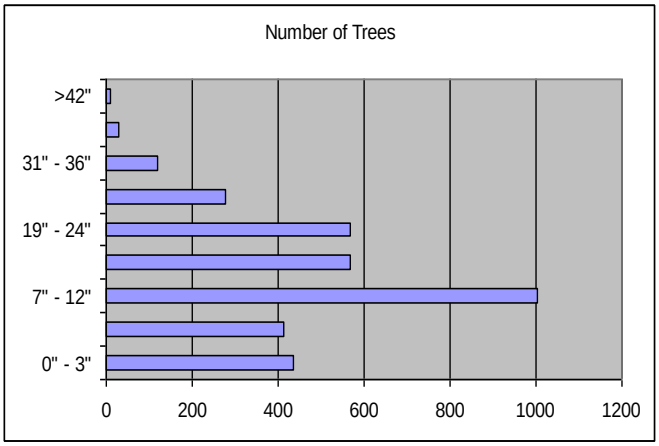
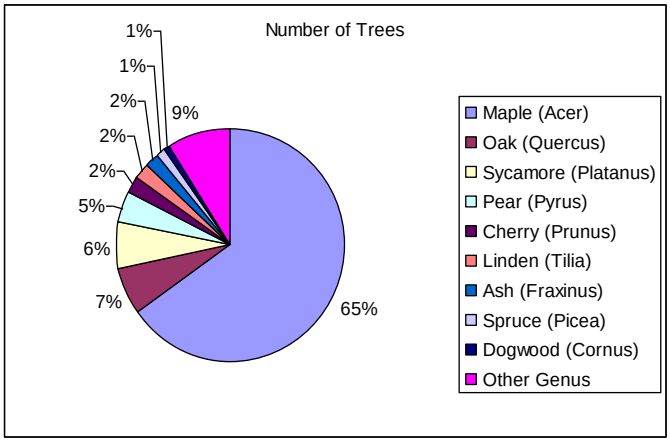


Fig 12. Shade Tree Species

Genus Composition	Number of Trees
Maple (Acer)	2,263
Oak (Quercus)	233
Sycamore (Platanus)	219
Pear (Pyrus)	157
Cherry (Prunus)	80
Linden (Tilia)	73
Ash (Fraxinus)	69
Spruce (Picea)	45
Dogwood (Cornus)	38
Other Genus	305
TOTAL	**3,482**



One of the outcomes of the 1998 plan was the purchase and implementation of a computer program and database to manage tree maintenance information. This computer management program will greatly increase data keeping functions and enhance the ability of the Shade Tree Commission to maintain shade trees. In 2010, the Shade Tree Commission is currently working on updating the tree survey.

CENTENNIAL TREES

View of 200-year-old red oaks on Washington Avenue.

As part of the Borough of Hawthorne's Centennial Celebration in 1998, the Shade Tree Commission conducted a survey to identify and acknowledge trees that were over 100 years in age. The survey was originally limited to street trees; however, as citizen enthusiasm for the survey increased, all trees that were recommended to the DPW were examined and, if eligible, listed. The final count was 97 trees. The oldest was a Black Oak estimated at 222 years in age, with an enormous 54-inch diameter trunk (Sowa 2000). The survey consisted primarily of white, red, and black oak, but also included sycamore, maple, white pine, and beech (Sowa 2000). One of the results of the survey was the realization that a large number of these trees, primarily the oaks, were located in the center of town along Washington Avenue. It appears that this area was populated by an oak dominated community that began near the floodplain of the Passaic River and extended north up the valley parallel to Goffle Brook. It is however, not clear whether these trees were intentionally planted or are the result of a longstanding historic oak community.